REMARKS

Amendment to the Claims

The claims have been amended to limit the sulfur concentration to a range of 1.5 to 6 phr and the 1,6-bis(N,N'-dibenzylthiocarbamoyldithio)-hexane concentration to a range of 0.5 to 5 phr. Support may be found in the specification at page 12, line 15-17, and in original claims 3 and 7.

Rejections Under 35 U.S.C. §103(a)

The claims have been rejected under 35 U.S.C. §103(a) as being unpatentable variously over Oare et al., U.S. 5,871,600 (Oare '600) in view of Vulcuren Trial Product KA 9188 Brochure (Vulcuren), Freeman et al., U.S. 5,494,091 (Freeman '091), and Saneto et al., U.S. 5,158,627 (Saneto '627). Applicant respectfully traverses these rejections.

Applicant addresses the rejections over Oare '600 in view of Vulcuren, and urges that the arguments overcome all of the applied art.

To establish a prima facie case of obviousness, there must be 1) motivation to combine the references, 2) an expectation of success of the proposed combination, and 3) the proposed combination must meet all of the limitations of the claims (MPEP 2143).

Applicant urges that in view of the current amendments to the claims, a prima facie case of obvious is not established. For reasons stated herein, the asserted combination of references does not teach nor make obvious a runflat tire as recited in the claims. Specifically, the references do not teach nor make obvious the use of a runflat tire having at least one insert comprising a rubbery polymer, from about 10 phr to about 130 phr of a filler, 1.5 to 6 phr of sulfur, and 0.5 to 5 phr of 1,6-bis(N,N'-dibenzylthiocarbamoyldithio)-hexane. Applicant urges that the rejection of the claims be withdrawn.

In relevant part to the presently amended claims, Oare '600 teaches a tire insert comprising a rubbery polymer (column 16, lines 41-61), filler (column 17, lines 37-54), and 0.5 to 8 phr of sulfur, alternatively 3 to 5 phr sulfur (column 18, lines 15-19). As acknowledged by the Examiner in the present Office Action, Oare '600 does not fairly teach nor make obvious the use of 1,6-bis(N,N'-dibenzylthiocarbamoyldithio)-hexane in a tire insert. To provide for this shortcoming of Oare '600, the Examiner proposes that Vulcuren exemplifies 1,6-bis(N,N'-dibenzylthiocarbamoyldithio)-hexane as being a well-known vulcanizing agent for rubber, and that Vulcuren further teaches that 1,6-bis(N,N'-dibenzylthiocarbamoyldithio)-hexane provides for improved properties, including modulus, hardness, and hysteresis. The Examiner states that

the motivation to combine is that use of 1,6-bis(N,N'-dibenzylthiocarbamoyldithio)-hexane gives "highly reversion-stable vulcanizates", i.e., reversion resistance is obtained.

Applicant urges that no motivation exists to combine the references. Oare '600 (and Freeman '091 and Saneto '627) is directed to a tire having a runflat insert. Nowhere do these references teach nor suggest the use of 1,6-bis(N,N'-dibenzylthiocarbamoyldithio)-hexane in a rubber composition suitable for use in a runflat insert, let alone 0.5 to 5 phr of 1,6-bis(N,N'-dibenzylthiocarbamoyldithio)-hexane with 1.5 to 6 phr of sulfur. Vulcuren is directed to use of 1,6-bis(N,N'-dibenzylthiocarbamoyldithio)-hexane in rubber. Nowhere does Vulcuren teach nor suggest the use of 1,6-bis(N,N'-dibenzylthiocarbamoyldithio)-hexane in a runflat insert, let alone 0.5 to 5 phr of 1,6-bis(N,N'-dibenzylthiocarbamoyldithio)-hexane with 1.5 to 6 phr of sulfur. Nor does the Examiner provide evidence that one skilled in the art would know, based on the general teaching in the art, that a reversion resistant runflat insert could be obtained by using 0.5 to 5 phr of 1,6-bis(N,N'-dibenzylthiocarbamoyldithio)-hexane with 1.5 to 6 phr of sulfur. Such an assertion is taught nowhere but in the present specification, and such a proposed modification would be impermissible highsight reconstruction of the claims, based on the teaching of the present specification. Applicant urges that since no motivation to combine exists, no prima facie case of obviousness is established.

Applicant further urges that, even if combined, no expectation of success exists for the proposed combination, and the proposed combination does not result in the present claims.

Initially, Applicant notes that Vulcuren teaches nothing regarding the actual rubber properties obtainable using 1,6-bis(N,N'-dibenzylthiocarbamoyldithio)-hexane. Vulcuren teaches only that rubber containing 1,6-bis(N,N'-dibenzylthiocarbamoyldithio)-hexane will show better retention of properties as a result of the reversion resistance of 1,6-bis(N,N'-dibenzylthiocarbamoyldithio)-hexane (page 3, "Vulcanisate Properties"). Upon reading Vulcuren, one skilled in the art would not understand that rubber containing 1,6-bis(N,N'-dibenzylthiocarbamoyldithio)-hexane would show improved properties; rather, one skilled in the art would understand that the rubber would show better retention of properties, i.e., reversion resistance.

Moreover, Applicant urges that, based on the teaching of Vulcuren, one skilled in the art would not expect that Oare '600 could successfully be modified through combination with Vulcuren to obtain the desired reversion resistance. Vulcuren teaches that 0.5 to 3 phr of 1,6-bis(N,N'-dibenzylthiocarbamoyldithio)-hexane can be used with sulfur (page 2, "Dosage"). Specifically, Vulcuren teaches that 2.5 phr of 1,6-bis(N,N'-dibenzylthiocarbamoyldithio)-hexane may be used with 0.5 phr of sulfur (Fig. 1), and that 7 phr of 1,6-bis(N,N'-dibenzylthiocarbamoyldithio)-hexane should be used with no sulfur. Thus, Vulcuren teaches no

more than the previously applied and withdrawn Wolpers '900 (see: Office Action mailed February 20, 2003 and response mailed May 20, 2003; Office Action mailed July 17, 2003 and response mailed October 16, 2003). As with Wolpers '900, Vulcuren teaches that 1,6-bis(N,N'-dibenzylthiocarbamoyldithio)-hexane should be used with little or no sulfur, i.e., from about 0 to about 0.5 phr. Upon reading Vulcuren, one skilled in the art would understand that a low sulfur concentration should be used to obtain the reversion resistant qualities of 1,6-bis(N,N'-dibenzylthiocarbamoyldithio)-hexane. Oare '600, however, requires that 0.5 to 8 phr of sulfur be used, or preferably 3 to 5 phr. Based on this, one skilled in the art would not expect to obtain the desired reversion resistance of Vulcuren in the insert of Oare '600, since Oare '600 requires too high a sulfur content. Applicant urges that since no expectation of success is present, no prima facie obviousness is established.

One skilled in the art would not look to Oare '600 for a suitable sulfur concentration to use with 1,6-bis(N,N'-dibenzylthiocarbamoyldithio)-hexane. If, as suggested by the Examiner, the motivation to combine Oare '600 with Vulcuren is to obtain the reversion resistance of 1,6-bis(N,N'-dibenzylthiocarbamoyldithio)-hexane, then one skilled in the art would look to Vulcuren for the relevant teaching. Oare '600 is silent with regard to 1,6-bis(N,N'-dibenzylthiocarbamoyldithio)-hexane. If one skilled in the art were attempting to obtain reversion resistance through the use of 1,6-bis(N,N'-dibenzylthiocarbamoyldithio)-hexane, he would resort to a reference that actually discusses the use of 1,6-bis(N,N'-dibenzylthiocarbamoyldithio)-hexane, such as Vulcuren. However, Vulcuren teaches that little or no sulfur should be used with 1,6-bis(N,N'-dibenzylthiocarbamoyldithio)-hexane. Thus, based on a motivation to obtain better reversion resistance, a combination of Oare '600 with Vulcuren would result in an insert having 1,6-bis(N,N'-dibenzylthiocarbamoyldithio)-hexane and little or no sulfur, e.g., from 0.5 to 7 phr of 1,6-bis(N,N'-dibenzylthiocarbamoyldithio)-hexane and from 0 to 0.5 phr of sulfur.

By contrast, the present claims recite from 0.5 to 5 phr of 1,6-bis(N,N'-dibenzylthiocarbamoyldithio)-hexane with 1.5 to 6 phr of sulfur. The recited sulfur concentration is much higher than that taught by Vulcuren. Thus, a combination of Oare '600 with Vulcuren does not result in the present claims. Applicant urges that for this reason, a prima facie case of obviousness is not established.

Further, since Vulcuren teaches the use of little or no sulfur to obtain the desired reversion resistance of 1,6-bis(N,N'-dibenzylthiocarbamoyldithio)-hexane in rubber, Vulcuren teaches away from the proposed combination of Oare '600 with Vulcuren. A combination resulting in the present claims would require a higher sulfur concentration, for example 0.5 to 8 phr or 3 to 5 phr as taught in Oare '600. However, Vulcuren teaches that the sulfur content

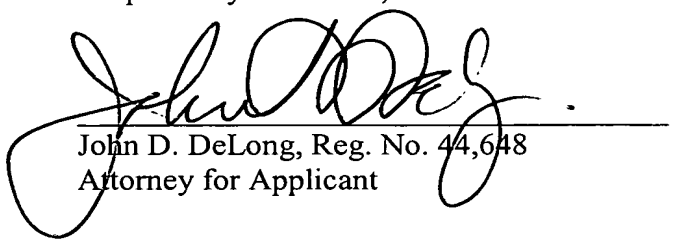
should be little or none, e.g., 0 to about 0.5 phr. Thus, Vulcuren teaches away from the proposed combination of Oare '600 and Vulcuren, and a prima facie case of obviousness is not established.

Applicant urges that none of the criteria required to establish a prima facie case of obviousness are present. Applicant urges, therefore, that the rejections be withdrawn.

Conclusion

It is believed that all of the claims now pending in the subject patent application are allowable, and that it is now appropriate to allow the subject patent application. Such an allowance is accordingly respectfully requested.

Respectfully submitted,



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